The Serbian Society for Ceramic Materials
The Academy of Engineering Sciences of Serbia
Institute for Multidisciplinary Research - University of Belgrade
Institute of Physics - University of Belgrade
Vinča Institute of Nuclear Sciences - University of Belgrade

PROGRAMME and the BOOK of ABSTRACTS

3CSCS-2015

3rd Conference of
the Serbian Society for Ceramic Materials
June 15-17.2015. Belgrade Serbia

Edited by:
Branko Matović
Zorica Branković
Dušan Bućevac
Vladimir V. Srdić

Programme and Book of Abstracts of The Third Conference of The Serbian Society for Ceramic Materilas **publishes abstracts from the field of ceramics, which are presented at international Conference.**

Editors-in-Chief
Dr Branko Matović
Dr. Zorica Branković
Dr. Dušan Bučevac
Prof. Vladimir V. Srdić

Publisher
Institute for Multidisciplinary Research, University of Belgrade
Kneza Višeslava 1, 11000 Belgrade, Serbia

For Publisher
Prof. Dr Sonja Veljović Jovanović

Printing layout
Vladimir V. Srdić

Press
Zonex, Beograd, Serbia

CIP – Каталогизација у публикацији
Народна библиотека Србије, Београд

666.3/.7(048)
66.017/.018(048)

DRUŠTVO za keramičke materijale Srbije. Konferencija (3 ; 2015 ; Beograd)

Programme ; and the Book of Abstracts / 3rd Conference of the Serbian Society for Ceramic Materials, 3CSCS-2015, June 15-17, 2015, Belgrade, Serbia ; [organizers] The Serbian Society for Ceramic Materials... [et al.] ; edited by Branko Matović ... [et al.]. - Belgrade : Institute for Multidisciplinary Research, University, 2015 (Beograd : Zonex). - 128 str. ; 24 cm

Tiraž 140. - Str. 6: Welcome Message / Branko Matovic. - Registar.

ISBN 978-86-80109-19-0

a) Керамика - Апстракти b) Наука о материјалима - Апстракти c) Наноматеријали - Апстракти

COBISS.SR-ID 215704332

The Serbian Society for Ceramic Materials
The Academy of Engineering Sciences of Serbia
Institute for Multidisciplinary Research-University of Belgrade
Institute of Physics-University of Belgrade
Vinča Institute of Nuclear Sciences-University of Belgrade

PROGRAMME AND THE BOOK OF ABSTRACTS

3rd Conference of The Serbian Society for Ceramic Materials

June 15-17, 2015
Belgrade, Serbia
3CSCS-2015

Edited by:
Branko Matović
Zorica Branković
Dušan Bućevac
Vladimir V. Srdić

P-25

MECHANICAL PROPRETIES OF POROUS CERAMIC MONOLITHS BASED ON DIATOMITE

Maja Kokunešoski[1], Jelena Majstorović[2], Jovana Ružić[1], Branko Matović[1], Svetlana Ilić[1], Adela Egelja[1], Aleksandra Šaponjić[1]

[1]University of Belgrade - Vinča Institute of Nuclear Sciences, P.O. Box 522, Belgrade, Serbia
[2]University of Belgrade - Faculty of Mining and Geology, Djušina 4, Belgrade, Serbia

Diatomite from surface coal mine Kolubara, Serbia, was used as a silica source. Firstly, diatomite was purified from organic and inorganic impurities by the heat and chemical treatments. Secondly, boric acid was used as a sintering aid up to 2 wt%. So, after using different pressures of 40, 60, and 80 MPa, the compacted samples were sintered at 850, 1000, 1150, and 1300 ºC for 4 h in air. A relatively high porosity in the range of 60-70% is obtained for the samples pressed at the applied pressures and sintered at 1000 ºC. The relations between mechanical properties like Young modulus, Poisson ratio, and compressive strength versus content of boric acid in the investigated samples were studied and discussed. Young modulus increases with lowering porosity in the samples sintered at 1300 ^{o}C, while Young modulus of the samples sintered at 1150 ^{o}C are assumed to be almost linear function of the forming pressure. Compressive strength of the observed samples is higher for the samples sintered at 1300 ^{o}C in comparison with the samples sintered at 1150 ^{o}C.

P-26

STRUCTURAL AND ELECTRONIC PROPERTIES OF PSEUDOBROOKITE

Zorka Z. Vasiljevic[1], Maria V. Nikolic[2], Obrad S. Aleksic[2], Nebojsa Labus[1], Miloljub D. Lukovic[2], Smilja Markovic[1], Pantelija M. Nikolic[1]

[1]Institute of Technical Sciences of SASA, Belgrade, Serbia
[2] Institute for Multidisciplinary Research, University of Belgrade, Belgrade, Serbia

Starting powders of TiO_2 (anatase) and Fe_2O_3 (hematite) were mixed in the molar ratio 1:1. Pseudobrookite powder was obtained by a combined milling/calcination procedure. Particle size distribution was analyzed on a laser

particle size analyzer and correlated with XRD and SEM analysis. The band gap was determined using UV/Vis spectroscopy. Green samples were sintered in a dilatometer and at 1000°C for 2h in air. Thermal diffusivity was determined from photoacoustic measurements. Electrical conductivity measurements were performed. The aim was to obtain pseudobrookite with properties suitable for polymer paste for thick films to be applied as gas sensors.

P-27

SAFE TRAPPING OF Cs RADIONUCLIDES IN THERMALLY TREATED MATRIX OF NATURAL ZEOLITE-CLINOPTILOLITE

Mia Omerašević[1], Jovana Ružić[1], Nikola Vuković[2], Uroš Jovanović[3], Miljana Mirković[1], Maria Čebela[1], Vesna Maksimović[1]

[1]University of Belgrade, Materials Department, Institute of Nuclear Sciences "Vinča" , PO Box 522, 11001 Belgrade, Serbia
[2]University of Belgrade, Faculty of Mining and Geology, Djusina 7, 11000 Belgrade, Serbia
[3]University of Belgrade, Institute of Nuclear Sciences "Vinča", Chemical Dynamics Laboratory, P.O. Box 522, 11001 Belgrade, Serbia

Cesium aluminosilicate phases are of the great interest as possible hosts for Cs immobilization in radioactive waste management. Cs-exchanged form of natural zeolite-clinoptilolite was prepared by standard procedure. Powder and cold pressed powder of Cs-exchanged clinoptilolite samples were heated at 1200 ^{0}C and compared. After thermal treatment, both Cs-exchanged clinoptilolite samples (non-sintered and sintered) showed satisfactory Cs ions retention during leaching test. Obtained results indicate that these cesium aluminosilicate ceramic forms are promising for the permanent immobilization of Cs radionuclides.